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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/096,648 06/12/98 HADLACZKY

G 24601-402A

EXAMINER

HM12/0301

MARTIN, J

STEPHANIE L. SEIDMAN
HELLER EHRMAN WHITE & MCAULIFFE
4250 EXECUTIVE SQUARE, 7TH FLOOR
LA JOLLA, CA 92037-9103

ART UNIT

PAPER NUMBER

1632

DATE MAILED:

03/01/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/096,648

Applicant(s)

HADLACZKY ET AL.

Examiner

Jill D. Martin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 December 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 32-41, 43, 44, 59, 60, 65, 67, 71-74 and 82-105 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 32-41, 43, 44, 59, 60, 65, 67, 71-74 and 82-105 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____

- 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: _____

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Continued Prosecution Application

The request filed on December 21, 2000 (Paper No. 14) for a Continued Prosecution Application (CPA) under 37 CFR 1.53(d) based on parent Application No. 09/096,648 is acceptable and a CPA has been established. An action on the CPA follows.

Claims 42, 64, 66, 68-70, and 75-81 have been canceled, claims 32-34, 36-39, 41, 43, 44, 65, 67, 73, and 74 have been amended, and claims 82-105 have been added. Claims 32-41, 43, 44, 59, 60, 65, 67, 71-74, and 82-105 are pending and are under current examination.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The prior rejection of claims 32-41, 43, 44, 59, 60, 65, 67, and 71-74 stand, and new claims 82-105 are rejected for the reasons advanced on pages 2-7 of the prior Office action mailed June 21, 2000 (Paper No. 12).

HOWEVER, PLEASE NOTE that the Perez Declaration under 37 CFR 1.132 filed February 1, 2001 (Paper No. 17) is sufficient with regard to the following enabled scope: a method for producing a transgenic non-human mammal comprising introducing into a female non-human mammal an ovum comprising a SATAC, wherein said ovum is fertilized into a zygote or embryo; and allowing the zygote or embryo to develop into a transgenic non-human mammal

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comprising said SATAC; and a method for producing a transgenic mouse comprising introducing mouse embryonic stem cells comprising a SATAC into a mouse embryo and introducing said embryo into a female mouse; and allowing the embryo to develop into a transgenic mouse comprising said SATAC.

All of the pending independent method claims recite "cell(s)". Dependent claims further distinguish the particular "cell(s)". As such, all claims have been included in this rejection as certain of the claims are still directed to non-human embryonic stem cells and the claims which are not are incomplete because the claims are missing critical steps depending upon the source "cell(s)". See scope of enablement above. For instance, if the cell is an oocyte, an unfertilized oocyte will not develop into an animal. Furthermore, direct introduction of a germ cell, which is not a fertilized ovum, zygote, or embryo, into a female animal is not sufficient for development of an animal.

With regard to those claims which are directed to "embryonic stem cells" and are not limited to "mouse embryonic stem cells", it is maintained that the art-recognized embryonic stem cells contributes to the germ line of the animal and that only embryonic stem cells isolated from the mouse have been established in the art at the time of effective filing of the instant application. See pages 4-5 of the prior Office action mailed 6/21/00 (Paper No. 12). Applicants indicate in the Response on page 27 that the claims have been amended to overcome this aspect of the enablement rejection. However, see claims 32, 33, 37, 43, 44, 73, *etc*, which have not been so limited.

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It is maintained that there are no enabled product claims directed to transgenic non-human embryos (new claims 101-105). See pages 6-7 of the prior Office action mailed 6/21/00, Paper No. 12. It is reiterated that the enablement standard requires that the specification teach both how to make and how to use the claimed invention. As such, although the Perez Declaration supports the production of transgenic mice and bovine embryos using SATACs and confirms the expression of detectable marker genes, it fails to teach how to use these mice as expression fails to convey a useful phenotype as a result of expression. The specification specifically discusses that their method of using SATACs provides a means for producing a disease-resistant transgenic animal. See page 40, lines 14-16. However, the specification as well as the evidence presented in the Perez Declaration fail to support that expression of any gene would result in immunoprotection. It is noted that with regard to claim breadth, the standard under 112, first paragraph entails the determination of what the claims recite and what the claims mean as a whole. In addition, when analyzing the enabled scope of the claims, the teachings of the specification are taken into account because the claims are to be given their broadest reasonable interpretation that is consistent with the specification. As such, in light of the specification, the claimed invention is properly interpreted with regard to the disclosed use of the claimed transgenic animals comprising SATACs for conveying a state of disease-resistance. Such an interpretation is consistent with the specification despite that the claims only require non-human

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or mouse embryos which comprise SATACs. As such, the specification fails to enable the claimed transgenic non-human and mouse embryos.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 32-41, 43, 44, 59, 60, 65, 67, and 71-74 stand and new claims 82-100 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is maintained that the claims are incomplete as written. See pages 7-8 of the prior Office action (Paper No. 12). Applicants' amendments to the claims and the addition of new claims fail to overcome this rejection. For instance, all of the pending independent method claims still recite "cell(s)". Dependent claims further distinguish the particular "cell(s)". The claims are not complete because the claims are missing critical steps depending upon the source "cell(s)". For instance, if the cell is an oocyte, an unfertilized oocyte will not develop into an animal, nor can it be merely cultured into an embryo. Furthermore, direct introduction of a germ cell, which is not a fertilized ovum, zygote, or embryo, into a female animal is not sufficient for development of an animal, nor can be merely cultured into an embryo. See identified enabled scope above.

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Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 32-41, 43, 44, 65, 71, 72, and 82-105 are rejected under 35 U.S.C. 102(e) as being anticipated by Scheffler (US Patent 6,133,503).

Scheffler teaches the production of transgenic mice using MACs comprising an exogenous nucleic acid sequence. Scheffler teaches methods which require the use of mouse ovum, zygotes, embryos, and embryonic stem cells, and further methods which require microcell fusion. See claims 1-14. See also column 18, lines 38-58, wherein Scheffler teaches the production of transgenic non-human mammals. Scheffler teaches that since a MAC is much smaller than the smallest intact chromosome, isolation of MACs using FACS provides a means to obtain substantially purified MACs, which can be introduced into a recipient cell. See column 17, lines 43-47. See also column 9, lines 59-68, and column 4, lines 14-35. Accordingly, the methods and mice of Scheffler meet all of the limitations of the claimed invention, particularly since it is noted that the MACs of Scheffler meet the description of the SATACs of the instant invention. See specification at page 6, lines 6-23 of the specification

Accordingly, Scheffler anticipates the claimed invention.

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Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 32, 67, 73, and 74 and 74 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scheffler (US Patent 6,133,503) taken with Hadlaczký (US Patent 5,288,625; REF BH of IDS, Paper No. 6).

Scheffler is described *supra*. Scheffler differs from the claimed invention in that they do not teach the specific deposited cell lines (EC3/7C5 and KE1 2/4) and/or the methods for generating cell hybrids using the deposited cell lines. However, at the time the claimed invention was made, Hadlaczký teaches the formation of stable chromosomes from the EC3/7 and KE1 2/4 cell lines. Hadlaczký further teaches the generation of cell lines from the derived from the deposited cell lines. See claims 1-12. Hadlaczký goes on to discuss hybridization assays and their observations of the λ neo chromosome with regard to corresponding minor and major mouse satellite DNA sequences. See paragraph bridging columns 8 & 9.

Accordingly, in view of the teachings Hadlaczký, it would have been obvious for one of ordinary skill in the art, at the time the claimed invention was made, to modify the methods of Scheffler of producing transgenic mice or non-mammals by utilizing the stable chromosomes generated by the cell lines of Hadlaczký. One of ordinary skill in the art would have been

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sufficiently motivated to make such modification as it was an art-recognized goal to study the transfer of artificial chromosomes *in vivo*, *e.g.*, for chromosome replication and/or function.

Thus, the claimed invention, as a whole, was clearly *prima facie* obvious in the absence of evidence to the contrary.

Conclusion

No claim is allowed.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jill Martin whose telephone number is (703)305-2147.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Karen Hauda, can be reached at (703)305-6608.

Any inquiry of a general nature or relating to the status of this application should be directed to the Kay Pinkney whose telephone number is (703)305-3553.

Papers related to this application may be submitted by facsimile transmission. Papers should be faxed via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CM1 Fax Center numbers are (703)308-4242 and (703)305-3014.



JILL D. MARTIN
PATENT EXAMINER

Jill D. Martin
Patent Examiner
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